U. S. DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Part 571

Federal Motor Vehicle Safety Standard No. 108; Lamp, Reflective Devices, and Associated Equipment; Denial of Petition for Rulemaking

AGENCY: National Highway Traffic Safety Administration (NHTSA), U. S. Department of Transportation (DOT).

ACTION: Denial of petition for rulemaking.

SUMMARY: This document denies a petition for rulemaking submitted by Mr. William H. Thompson III requesting NHTSA amend Federal Motor Vehicle Safety Standard (FMVSS) No. 108, Lamps, reflective devices, and associated equipment. Specifically, Mr. Thompson requested we revise the activation process for red and amber signal warning lamps on school buses to require a new intermediate step during which both colors are activated simultaneously and flash in an alternating pattern and that we decouple the process by which lamps transition to the red-only configuration from the opening of the bus entrance door. NHTSA is denying this petition because Mr. Thompson has not identified a safety need to justify making changes he requested, and Mr. Thompson did not provide persuasive quantitative data to show adopting his requested changes would result in a net benefit to safety.

DATES: The petition is denied as of [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

FOR FURTHER INFORMATION CONTACT: Mr. Wayne McKenzie, Office of Crash Avoidance Standards (Phone: 202-366-1810; Fax: 202-366-7002) or Mr. Daniel Koblenz, Office of the Chief Counsel (Phone: 202-366-2992; Fax: 202-366-3820). You may mail these

officials at: National Highway Traffic Safety Administration, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590.

SUPPLEMENTARY INFORMATION:

I. The Petition

On October 28, 2012, NHTSA received a letter from Mr. William H. Thompson III containing a petition for rulemaking to amend certain aspects of Federal motor vehicle safety standard (FMVSS) No. 108 relating to school buses equipped with red and amber signal warning lamps.[1] In his petition, Mr. Thompson requested NHTSA add an intermediate lamp configuration to the activation process for signal warning lamps between the existing amber-only and red-only configurations during which the amber and red lamps are both activated and alternate flashing. Additionally, he requested the transition from this intermediate amber-and-red configuration to the red-only configuration be controlled by a timer rather than by the bus door opening mechanism. Mr. Thompson stated adding an intermediate amber-and-red configuration that is activated for a fixed period of time would improve the effectiveness with warning other drivers when the bus is stopping for children as compared to the existing system. According to Mr. Thompson, these changes would reduce confusion regarding the meaning of signal warning lamps, which could in turn reduce the frequency with which other drivers engage in unsafe driving behaviors such as illegally passing school buses while their red signal warning lamps are activated (so-called "stop-arm violations").

FMVSS No. 108, Lamps, reflective devices, and associated equipment, currently requires new school buses be equipped with four red signal warning lamps and allows for the optional

[1] Since Mr. Thompson filed his petition, NHTSA issued a final rule reorganizing almost all aspects of FMVSS No. 108. This final rule did not make any substantive changes to the standard and did not affect our analysis of Mr. Thompson's petition. However, it did rearrange paragraphs within the standard, and as a result, paragraph numbers Mr. Thompson cited in his petition are no longer accurate.

installation of four amber signal warning lamps. The red lamps must be placed on the front and rear of the bus cab (two on the front and two on the rear) as high and as far apart as practicable, with optional amber lamps placed inboard of red lamps. Under the existing signal warning lamp activation requirements, a school bus driver manually activates the amber signal warning lamps by actuating a switch to indicate to other drivers that the bus is preparing to pick up or drop off children. Amber lamps stay activated until the driver opens the bus entrance door, at which time amber lamps automatically deactivate and red lamps automatically activate to indicate children are in the process of boarding or offloading the bus.

Mr. Thompson argued, in his petition, the current signal warning lamp activation process causes uncertainty among other drivers, and this uncertainty constitutes a safety need that justifies amending FMVSS No. 108. Specifically, Mr. Thompson claimed current signal warning lamps do not effectively communicate when the bus will begin the process of picking up or dropping off children because amber lamps do not transition to red until the bus door is actually open (i.e., until boarding or offloading has begun). According to Mr. Thompson, this uncertainty among other drivers leads to "risk factors" in the form of unsafe driving behaviors, such as "passing school buses while the red signal lamps are flashing and stop arm is extended and being cited by law enforcement, making a 'panic stop' to avoid passing the school bus as not to break the law and making a sudden stop and having a following motorist caught unaware." These risk factors, in turn, could lead to injury or death of children and other road users.

To address this perceived safety risk, Mr. Thompson requested NHTSA amend FMVSS No. 108 to revise activation requirements for school bus signal warning lamps so they more clearly indicate the status of the school bus to other drivers. Per his petition, upon approaching a bus stop, the bus driver would activate amber flashing signal lamps by actuating a switch as is

done under the existing rule. However, as the bus makes its final approach, the bus driver would actuate the signal warning lamp switch a second time, which would activate an intermediate signal warning lamp configuration during which amber and red signal warning lamps are activated and alternate flashing. This new configuration would be activated for a fixed period (the petition suggests approximately 3 seconds) after which the signal warning lamp system would automatically progress to a red-only configuration and the stop sign would deploy. The transition to the red-only configuration signals other drivers to come to a complete stop and indicates to the bus driver it is safe to open the bus door to pick up or drop off children. According to Mr. Thompson, a 3 second intermediate step is sufficiently long to warn other drivers that the bus is preparing to stop, which will reduce some of risk factors described above.

II. Agency Analysis

We are denying Mr. Thompson's petition on two bases. First, we do not believe confusion over the meaning of school bus signal warning lamps is a safety need that must be addressed by amending the lighting standard. Second, Mr. Thomson has not provided data persuasively demonstrating changes he proposed would lead to a net benefit for vehicle safety. We explain our reasoning in more detail below.

a. Mr. Thompson has not demonstrated that uncertainty over the meaning of signal warning lamps is a safety need that must be addressed.

Congress enacted the Motor Vehicle Safety Act of 1966 (the "Safety Act") for the purpose of "reduc[ing] traffic accidents and deaths and injuries resulting from traffic accidents."[2] To accomplish this, the Safety Act authorizes NHTSA to promulgate FMVSSs as well as to engage in other activities such as research and development. Because NHTSA has limited resources with which to accomplish goals of the Safety Act, the agency must make choices about

[2] 49 U.S.C. § 30111.

how to most effectively and efficiently allocate resources. Accordingly, we will not take action under our Safety Act authority if we do not believe doing so will further interests of vehicle safety. In the context of petitions for rulemaking filed under 49 CFR part 552, this means we will not grant a petition to amend an FMVSS unless we believe doing so will address a traffic-related safety need.

Mr. Thompson has not shown such a safety need exists in this case. As noted earlier, Mr. Thompson argued in his petition that confusion over the meaning of signal warning lamps is a significant safety risk because it leads to unsafe driving behavior around school buses. To make his case, Mr. Thompson cited several sources, including two NHTSA publications (one survey and one guidance document) and two State-sponsored studies of stop-arm violations.[3] While we agree with Mr. Thompson that these sources support the conclusion that school bus stop-arm violations are a problem, they do not support Mr. Thompson's assertion that stop-arm violations and other unsafe driving behavior is because of uncertainty over signal warning lamps.

We will first address the two NHTSA publications Mr. Thompson cited. The first NHTSA publication was our 1997 National Survey on Speeding and Unsafe Driving Attitudes and Behaviors, which contains a finding that 99 percent of drivers believed stop-arm violations were the most egregious type of moving violation.[4] As the title suggests, this is a survey of public opinion; it does not make any conclusions based on empirical data about the frequency or cause of stop-arm violations and does not contain information relevant to evaluating whether

[3] In addition to these studies, Mr. Thompson provided other types of evidence. For example, Mr. Thompson stated "expert evidence" indicates drivers who see amber lamps tend to speed up to try and "get past the bus" before red lamps activate. Mr. Thompson asserted signal warning lamp systems could potentially be misused under existing requirements but admitted the sort of misuse he described is "probably not a common occurrence." However, because this information is unsourced and anecdotal, we cannot use it as a basis in our evaluation for concluding a safety risk exists.

[4] DOT HS 809 688, available at https://one.nhtsa.gov/people/injury/drowsy_driving1/speed_volII_finding/SpeedVolumeIIFindingsFinal.pdf. (Please note that the survey was updated in 2002, but kept the same DOT HS number)

these violations are because of uncertainty regarding the meaning of signal warning lamps. The other NHTSA publication Mr. Thompson cited was our 2000 Best Practices Guide on Reducing Illegal Passing of School Buses.[5] This publication does not include empirical data supporting Mr. Thompson's proposal. Moreover, the policy proposal this document contains focuses on addressing the problem of stop-arm violations through a combination of educational and enforcement initiatives, not changes to FMVSS No. 108.

The two State-sponsored studies Mr. Thompson cited do not support Mr. Thompson's proposition that uncertainty over signal warning lamps is a safety risk. The first study Mr. Thompson cited was conducted by the North Carolina Department of Public Instruction.[6] That study documented occurrences of stop-arm violations but does not establish their underlying causes.[7] The second study Mr. Thompson cited was sponsored by the Florida Department of Education.[8] Unlike the North Carolina study, the Florida study drew conclusions regarding causes of stop-arm violations, stating "while many motorists clearly do not understand the law as it applies to this situation, many more motorists are, in fact, intentionally violating the law."

While the publications Mr. Thompson cited may demonstrate stop-arm violations are a safety problem, they do not support his conclusion that uncertainty over the meaning of signal warning lamps constitutes a safety need that must be addressed through amendments to FMVSS No. 108. None of the publications he cited link uncertainty regarding the meaning of signal

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[5] Available at https://one.nhtsa.gov/people/injury/buses/2000schoolbus/index.htm.
[6] Available at http://www.ncbussafety.org/StopArmViolationCamera/.
[7] In a more recent study conducted in October 2013 by the North Carolina Department of Public Instruction, authors explicitly stated the question of why stop-arm violations occur must be studied further, and confusing signal warning lamps are just one of several possible reasons for this problems. *See* Pilot Testing of a School Bus Stop Arm Camera System (October 2013), available at http://www.ncbussafety.org/StopArmViolationCamera/documents/2013%2010%2030%20Final%20ITRE_stoparm_Camera_report.pdf.
[8] University of South Florida College of Engineering, Center for Urban Transportation Research, Motorist Comprehension of Florida's School Bus Stop Law and School Bus Signalization Devices: Final Report (June 1997), available at https://www.cutr.usf.edu/wp-content/uploads/2012/07/school.pdf.

warning lamps to unsafe driving behaviors in any significant way, and in fact could be read as supporting the opposite conclusion –drivers understand the signal warning lamps but (at least in some instances) are simply choosing to ignore them.

b. Mr. Thompson has not provided us with data showing persuasive evidence that the change he proposes will provide a positive effect on safety.

As we explained in our 1998 statement of policy on signal lighting, when evaluating petitions to add or amend signal lighting requirements, we look at whether the petitioner has provided data that "show[s] persuasive evidence of a positive safety impact."[9] If we cannot determine the change will positively affect safety, "NHTSA will not change its regulations to permit the new signal lighting idea, because that would negatively affect standardization of signal lighting." In other words, a petitioner requesting an amendment to an existing signal lighting requirement must provide data persuading us the change will have a benefit to safety outweighing detriments to safety that will occur because of reduced standardization of signal lighting.

Because NHTSA does not have resources to sponsor research on most of the lighting ideas proposed, we rely on petitioners to provide us with data to evaluate whether a requested change to signal lighting requirements will provide a net benefit to vehicle safety. Mr. Thompson's petition did not provide us with such data. Rather, information Mr. Thompson provided falls into one of two categories: information supporting the general assertion stop-arm violations are a problem (i.e., the studies described in the previous section), or information explaining how he developed specific aspects of this proposal (i.e., he chose a duration of 3 seconds for the intermediate lamp configuration because that is the duration of the yellow light

[9] Statement of Policy, 63 FR 59482 (Nov. 4, 1998).

on a traffic signal for 25 mile-per-hour traffic). Mr. Thompson's petition included no clear data demonstrating the changes he proposed would be beneficial for vehicle safety.

Given that Mr. Thompson did not provide proof of an offsetting safety benefit, we are concerned the changes he proposed may lead to a decrease in vehicle safety because they would disrupt signal light standardization, which could cause driver confusion. As we have explained repeatedly through years of letters of interpretation,[10] as well as our prior responses to other petitions made under Part 552,[11] the effectiveness of all signal lamps (including school bus signal warning lamps) is premised on driver familiarity with established lighting schemes. For decades, the knowledge that flashing amber signal warning lamps on a school bus indicate a school bus is preparing to stop and flashing red signal warning lamps indicate children are boarding or offloading, has been ingrained in the mind of the driving public. Changing how school bus warning lamps operate by adding Mr. Thompson's intermediate configuration would disrupt this well-understood scheme. This could increase driver confusion until such time all buses use the new lighting scheme and drivers become familiar with the new lighting scheme.

Relatedly, we are also concerned about Mr. Thompson's other proposal to tie the activation of the red-only signal warning lamp configuration to a 3 second timer rather than to the opening of the bus entrance door. The current standard requires amber signal warning lamps deactivate and red signal warning lamps activate automatically upon the opening of the bus entrance door. Under this system, red lamps are only ever activated when the bus is in the process of picking up or dropping off children. By contrast, under Mr. Thompson's scheme, the red-only configuration necessarily activates before bus doors open. This could confuse drivers

[10] *See, e.g.*, letter to James A. Haigh (April 8, 2008), available at https://isearch.nhtsa.gov/files/07-005005as.htm.
[11] *See, e.g.*, NovaBUS, Inc.: Denial of Application for Decision of Inconsequential Compliance, 67 FR 31862 (May 10, 2002).

who have learned red signal warning lamps are only activated when children are in the process of boarding or offloading.

Finally, we note the Florida-sponsored study discussed in the previous section found significant driver confusion over the legal obligations applying to drivers when they encounter a school bus with flashing signal warning lamps. (This is distinct from the confusion Mr. Thompson identifies as a safety risk, which is over the meaning of the signal warning lamps themselves.) Given there is evidence drivers are already confused about laws relating to stop-arm violations, we do not think it would be beneficial for safety to make the signal warning lamp activation sequence more complex than it already is (as would be the case under Mr. Thompson's request).

For these reasons in accordance with 49 CFR Part 552, Mr. Thompson's October 28, 2012, petition for rulemaking is denied.

Issued on January 12, 2018, in Washington, D.C., under authority delegated in 49 CFR 1.95 and 501.5.

Heidi R. King

Deputy Administrator

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